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Fenton

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(54) **COMPOSITE SIDEWALL AND CARGO BODY HAVING SAME**

USPC 296/186.1
See application file for complete search history.

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(63) Continuation of application No. 17/080,107, filed on Oct. 26, 2020, now Pat. No. 11,338,542, which is a continuation of application No. 16/458,706, filed on Jul. 1, 2019, now Pat. No. 10,814,581.

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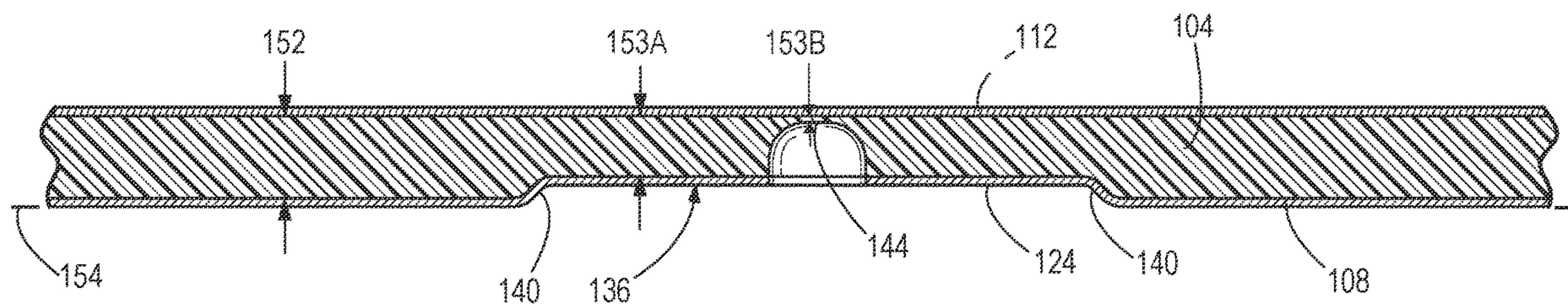
(57) **ABSTRACT**

A composite molded cargo body panel including a core, an interior skin secured to a first side of the core having a thickness, and exterior skin secured to a second side of the core, and a recess. The core thickness at the recess is reduced compared to a maximum core thickness, and the recess defines a support surface. A pocket is formed in the recess, with the core thickness at the pocket being less than the core thickness at the recess. A logistics insert is attached to the support surface of recess so that, at the recess, the logistics insert extends across the pocket.

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(58) **Field of Classification Search**
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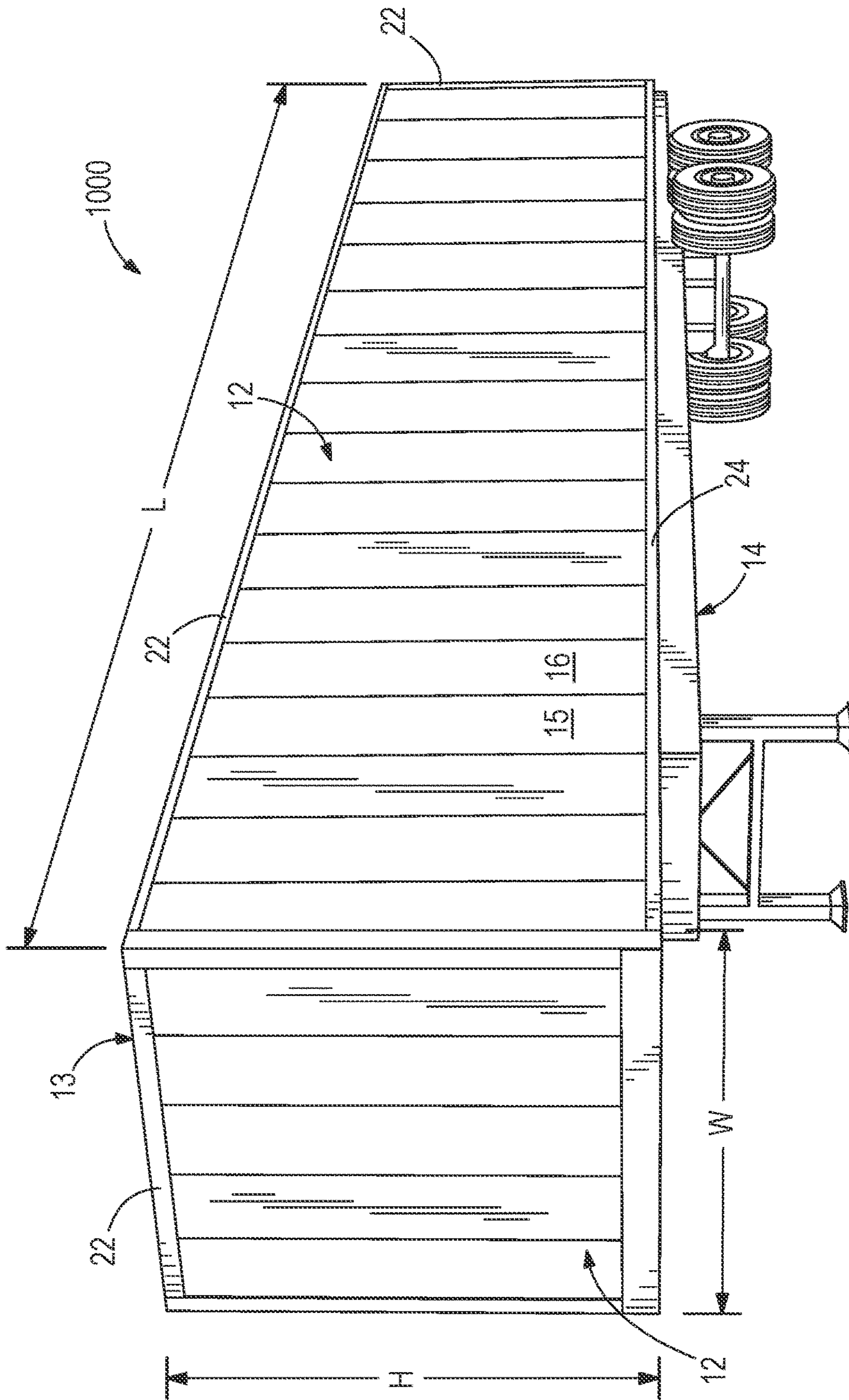


FIG. 1

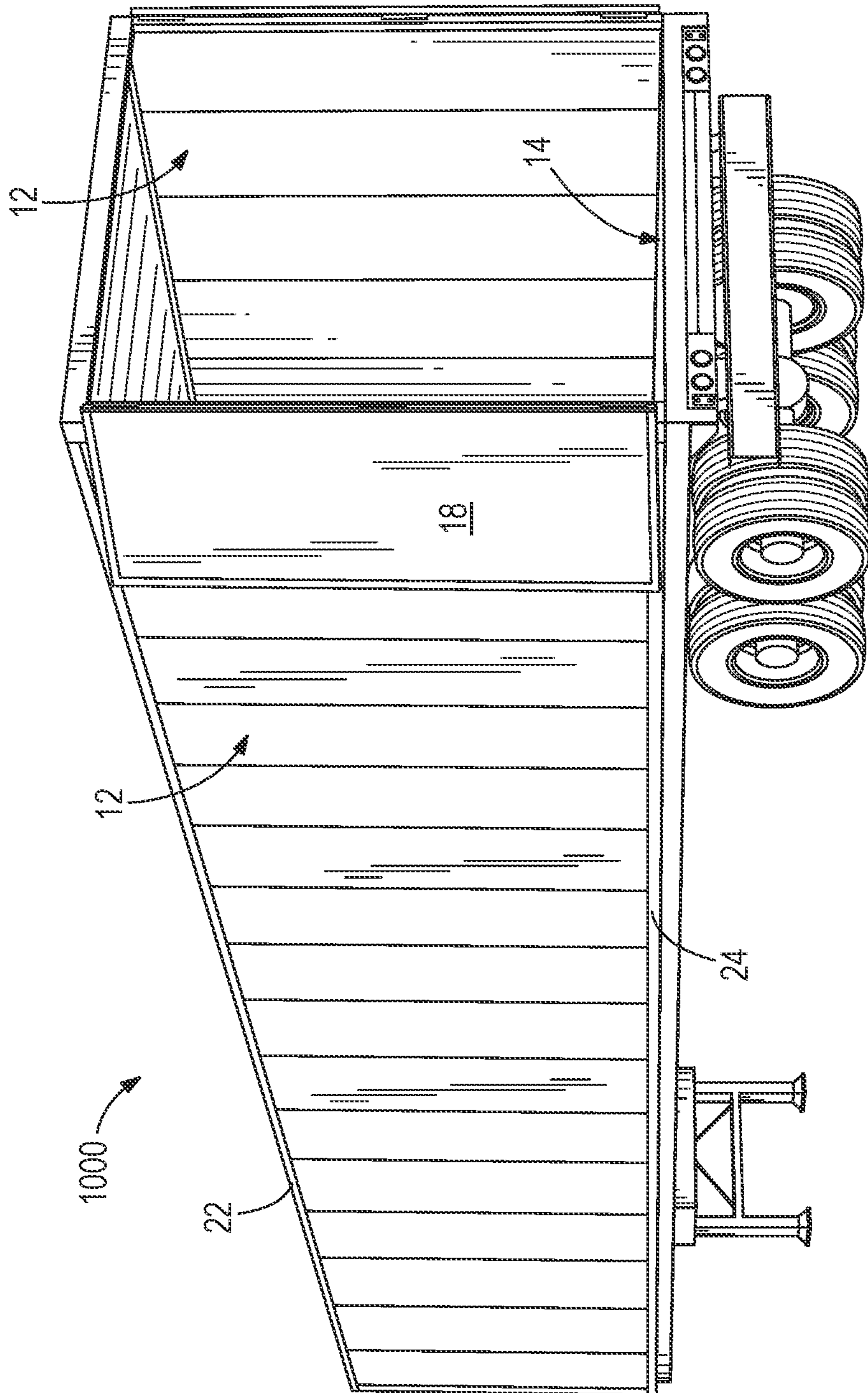


FIG. 2

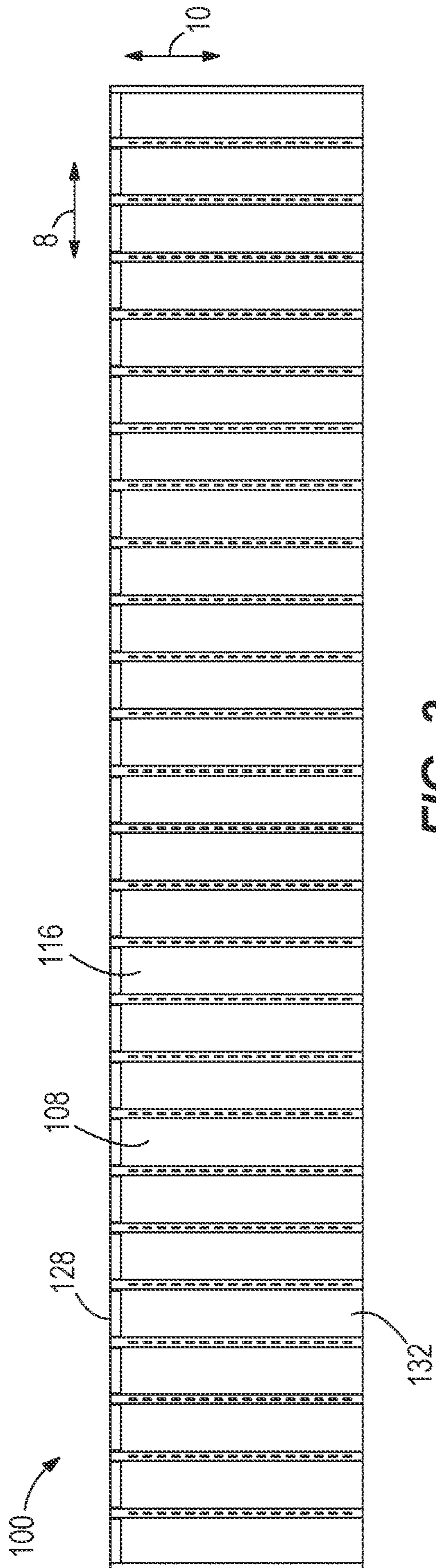


FIG. 3

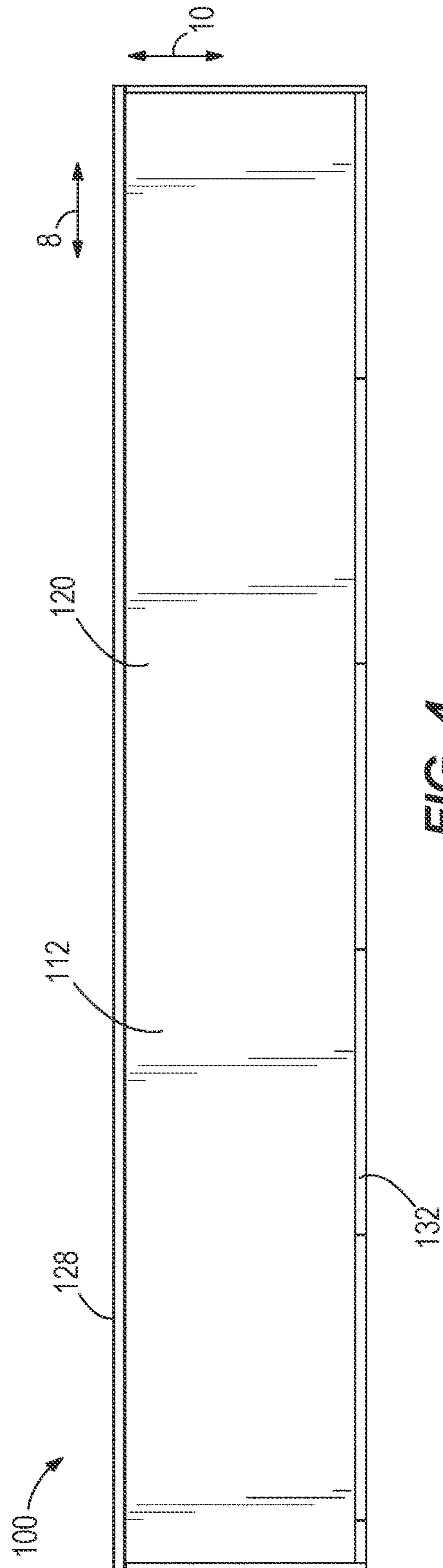
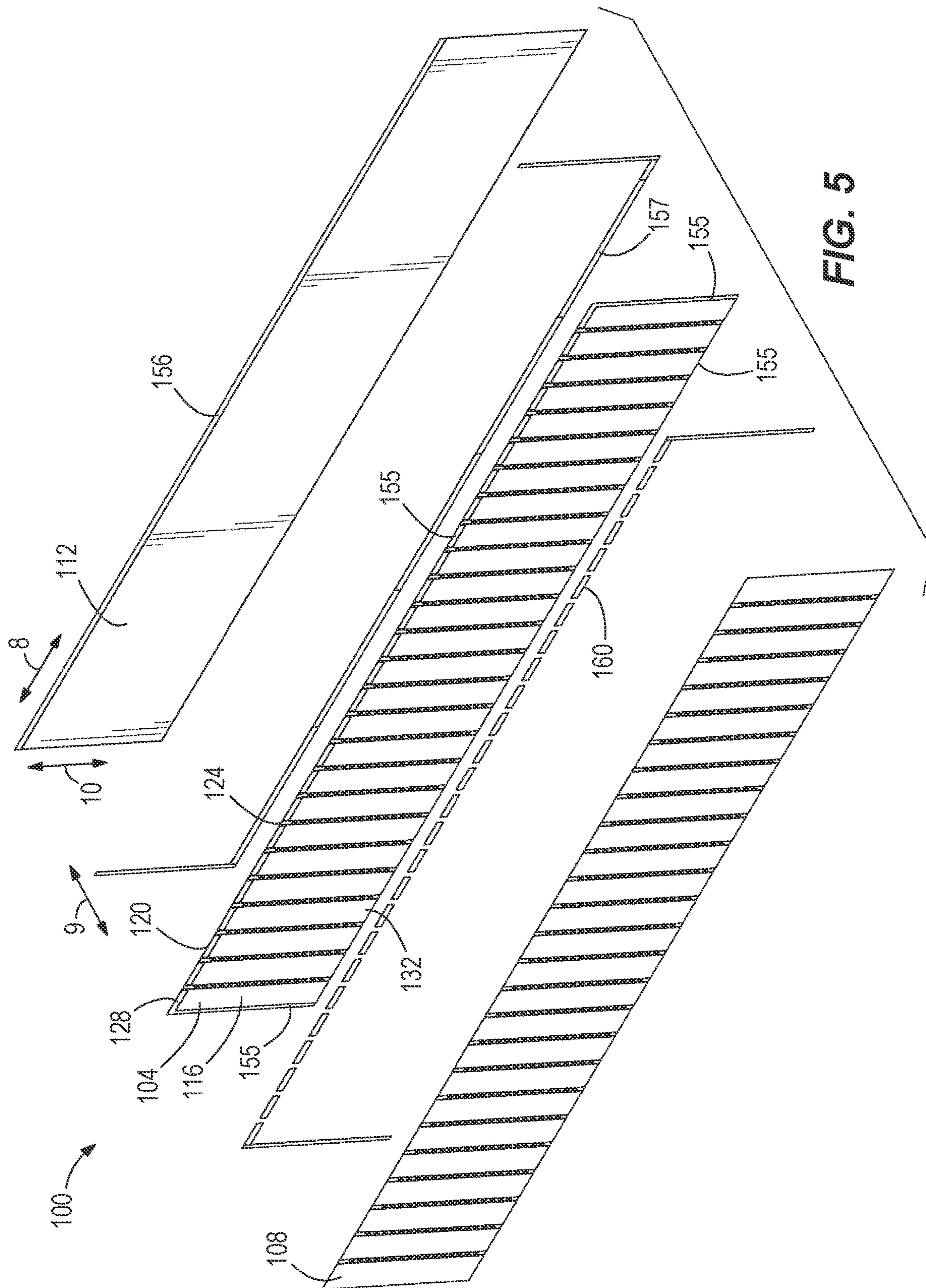


FIG. 4



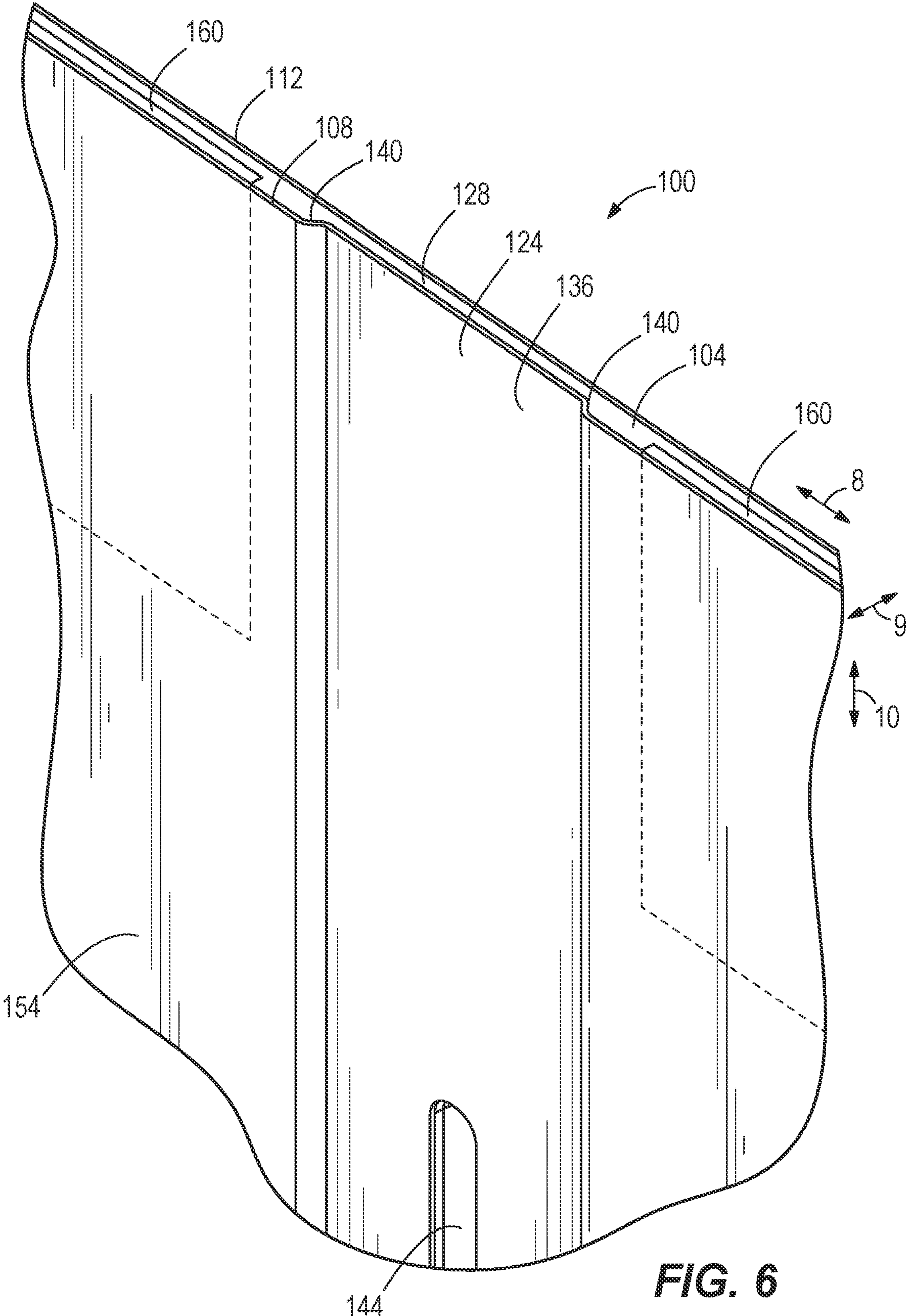


FIG. 6

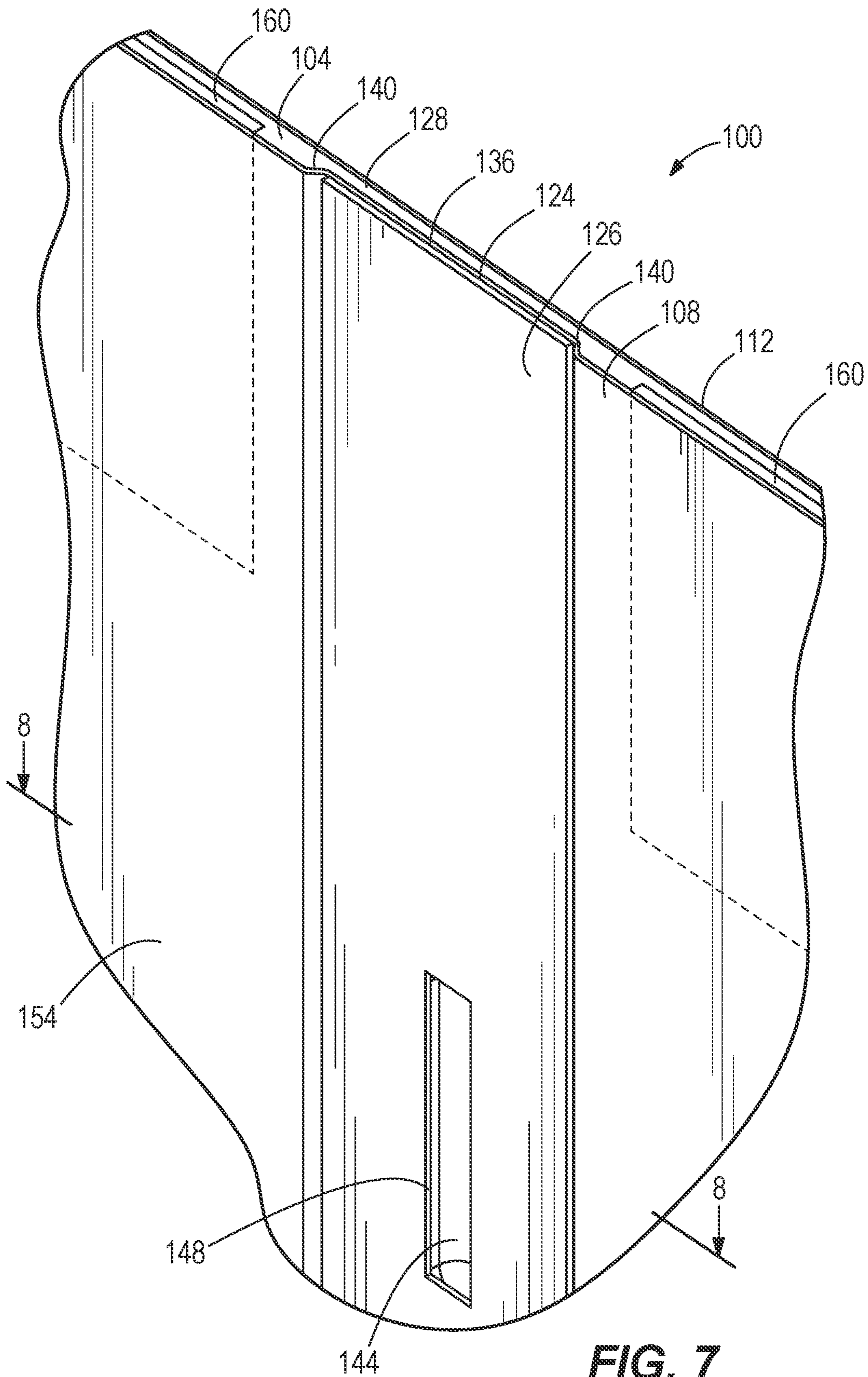


FIG. 7

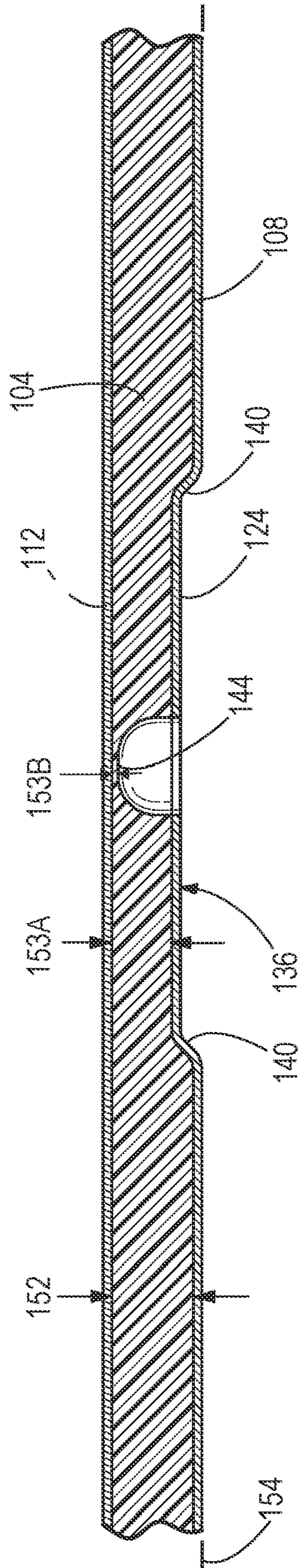


FIG. 8

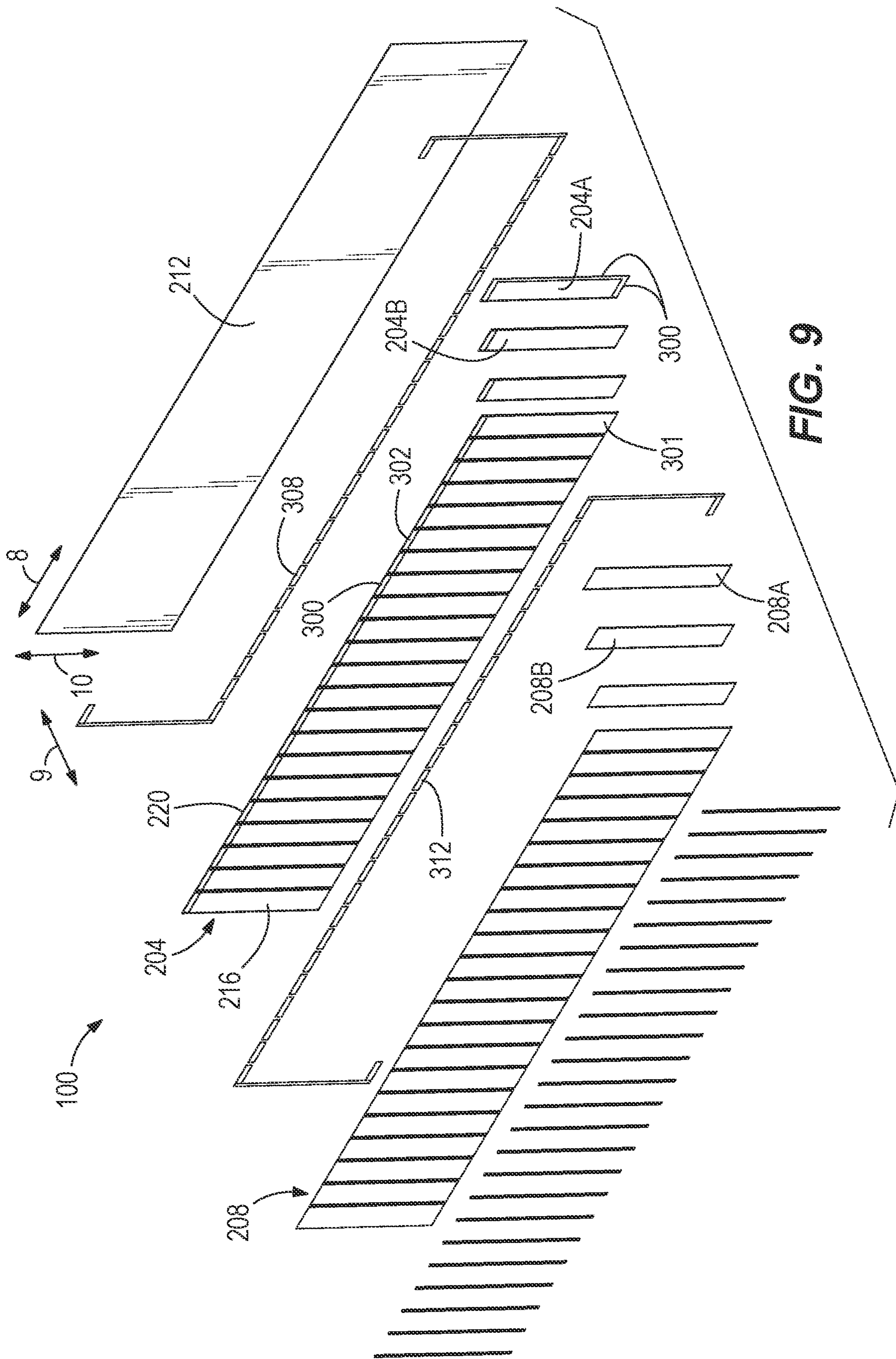
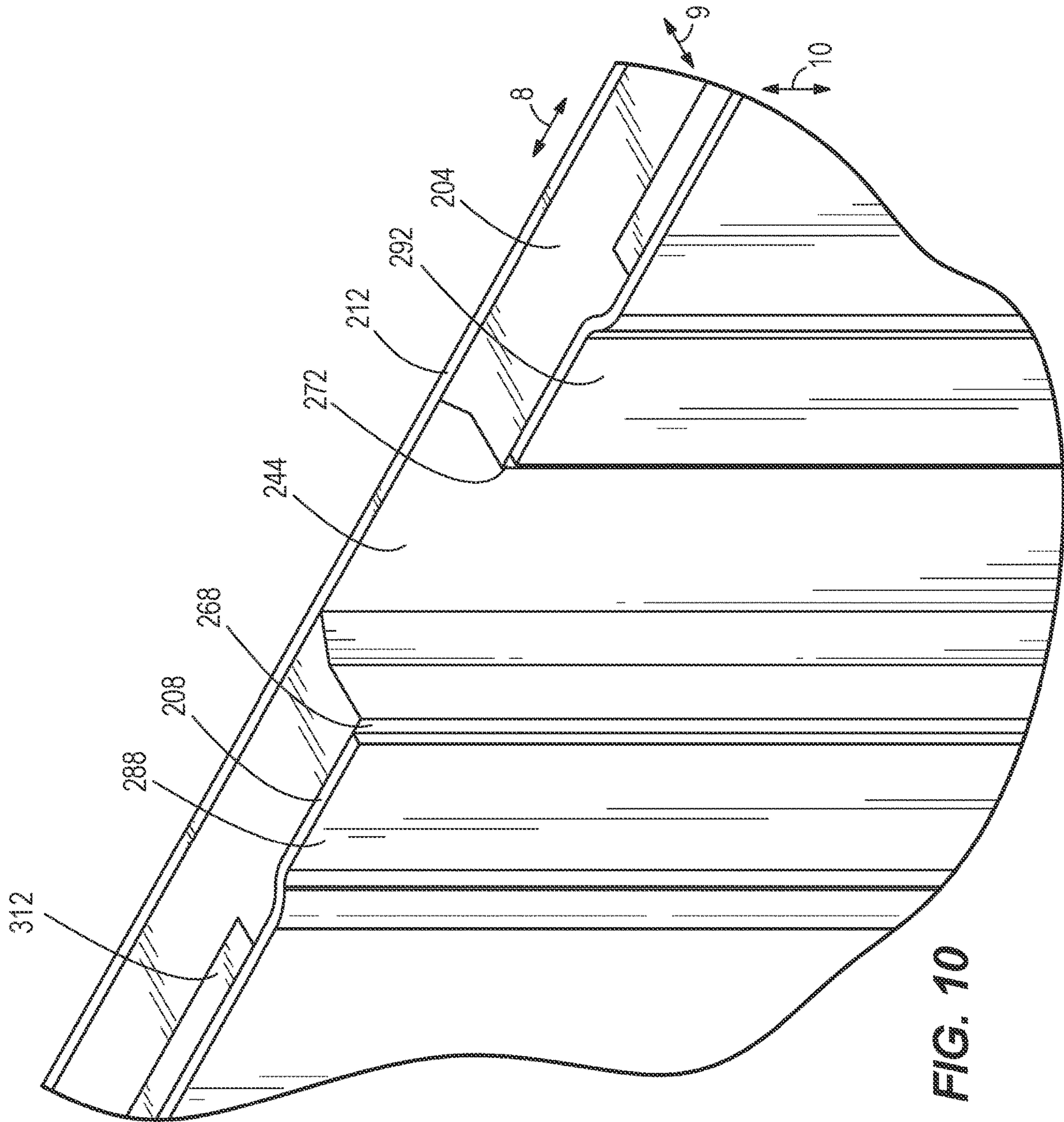
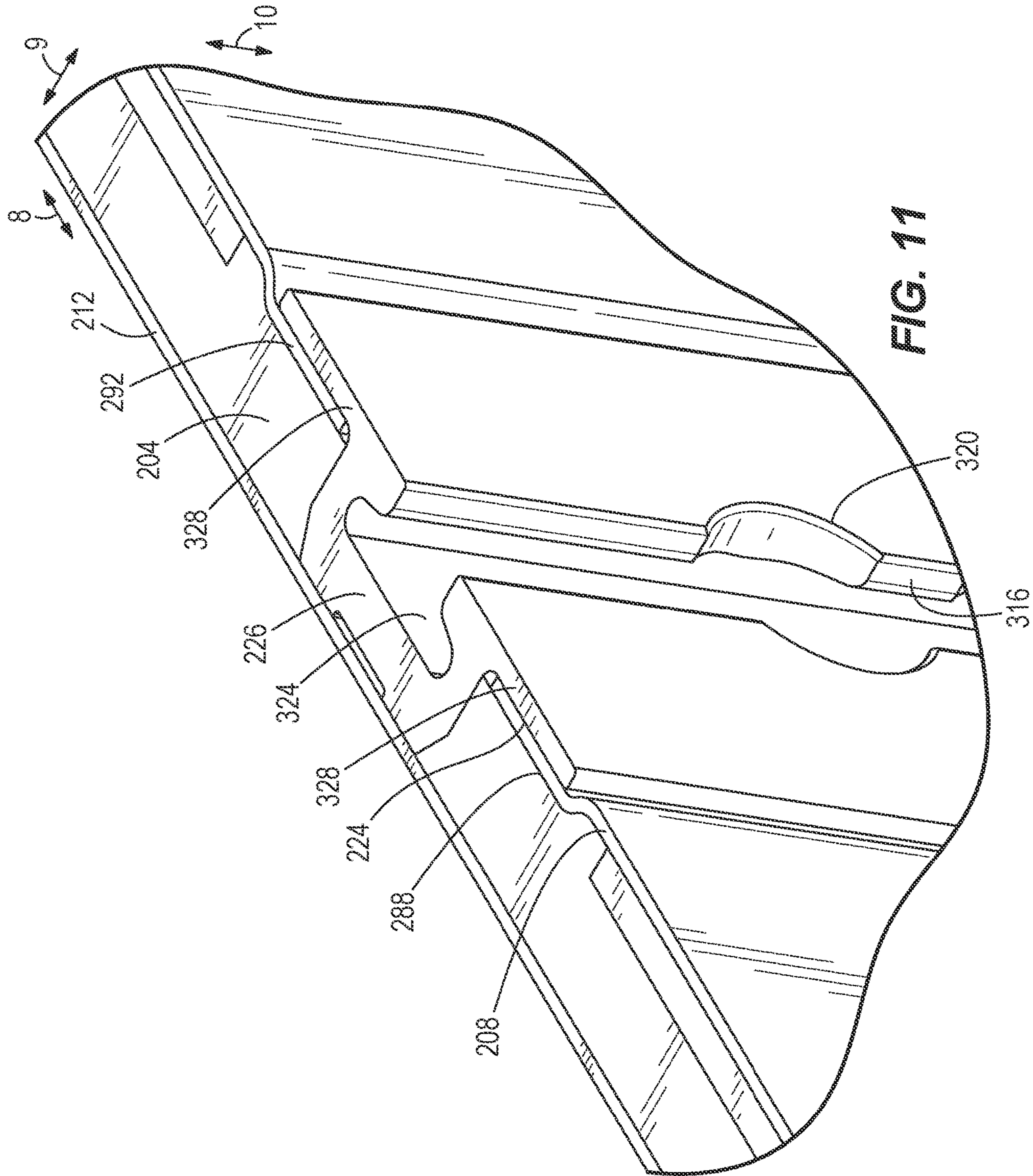


FIG. 9





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COMPOSITE SIDEWALL AND CARGO BODY HAVING SAME

CROSS REFERENCE TO RELATED APPLICATIONS

The present patent application is a continuation of U.S. patent application Ser. No. 17/080,107, filed Oct. 26, 2020, now U.S. Pat. No. 11,338,542, which is a continuation of U.S. patent application Ser. No. 16/458,706, filed Jul. 1, 2019, now U.S. Pat. No. 10,814,581, which claims priority to U.S. Provisional Patent Application No. 62/693,743 filed on Jul. 3, 2018, the entire contents of both of which is hereby incorporated by reference.

BACKGROUND

The invention relates to cargo body construction, for example, for over-the-road trailers pulled by semi tractors. In particular, the invention relates to trailer sidewall construction. Trailer sidewalls are often constructed from a number of panels joined together at joints (e.g., vertical post joints, lap joints, or splice plates).

SUMMARY

According to one aspect of the invention, a composite molded cargo body panel has an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction. The composite molded cargo body panel includes a core, an interior skin secured to a first side of the core, an exterior skin secured to a second side of the core opposite the first side, a plurality of recesses dispersed along the first directions at intervals in the interior skin, a pocket formed in each of the plurality of recesses, and a plurality of logistics profile inserts. The core has a thickness measured perpendicular to the first and second directions. The interior skin defines an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel. The exterior is spaced from the interior skin such that a spacing distance between the interior and exterior skins defines the core thickness. The core thickness at each of the plurality of recesses is reduced compared to a maximum core thickness, with each of the plurality of recesses defining a support surface. The core thickness at the pocket is less than the core thickness at each of the plurality of recesses. The plurality of logistics inserts are attached to the respective support surfaces of the plurality of recesses so that, at each of the plurality of recesses, the logistics profile insert extends across the pocket. The exterior skin is continuous, spanning the plurality of recesses in the first direction.

According to another aspect of the invention, a composite molded cargo body panel has an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction. The composite molded cargo body panel includes a core, an interior skin secured to a first side of the core, an exterior skin secured to a second side of the core opposite the first side, a plurality of recesses dispersed along the first directions at intervals in the interior skin, and a pocket formed in each of the plurality of recesses. The core has a thickness measured perpendicular to the first and second directions. The interior skin defines an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel. The exterior is

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spaced from the interior skin such that a spacing distance between the interior and exterior skins defines the core thickness. The core thickness at each of the plurality of recesses is reduced compared to a maximum core thickness.

5 The core thickness at the pocket is zero.

According to yet another aspect of the invention, a composite molded cargo body panel has an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction. The composite molded cargo body panel includes a core, an interior skin secured to a first side of the core, an exterior skin secured to a second side of the core opposite the first side, and a plurality of recesses dispersed along the first directions at intervals in the interior skin. The core has a thickness measured perpendicular to the first and second directions. The interior skin defines an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel. The exterior is spaced from the interior skin such that a spacing distance between the interior and exterior skins defines the core thickness. The exterior skin is continuous throughout the entirety of the composite molded panel. A plurality of pockets are dispersed along the first direction at intervals in the interior skin, and the core thickness at each of the plurality of pockets is reduced to zero. The interior skin is absent at each of the plurality of pockets.

BRIEF DESCRIPTION OF THE DRAWINGS

30 FIG. 1 is a perspective view of a trailer, including a plurality of sidewalls having sidewall joints.

FIG. 2 is an alternate perspective view of the trailer of FIG. 1.

35 FIG. 3 is an inner side view of a composite sidewall panel for a cargo body according to a construction of the present invention.

FIG. 4 is an outer side view of the composite sidewall panel of FIG. 3.

40 FIG. 5 is an exploded assembly view of the composite sidewall panel of FIG. 3.

FIG. 6 is an enlarged perspective view of the composite sidewall panel of FIG. 5 having a recess, prior to attachment of logistics inserts.

45 FIG. 7 is a perspective view of the composite sidewall panel of FIG. 5 after attachment of logistics inserts.

FIG. 8 is a cross sectional view of the composite sidewall panel of FIG. 5, along line 8-8, as shown in FIG. 7.

50 FIG. 9 is an exploded assembly view of a composite sidewall panel according to an alternate embodiment of the invention.

FIG. 10 is an enlarged perspective view of the composite sidewall panel of FIG. 9 having a recess, prior to attachment of logistics inserts.

55 FIG. 11 is a perspective view of the composite sidewall panel of FIG. 10 after attachment of logistics inserts.

DETAILED DESCRIPTION

60 FIGS. 1 and 2 illustrate a trailer 1000 as disclosed in U.S. Pat. No. 9,884,660 for over-the-road use with a truck to transport large cargo volumes. As shown, the trailer 1000 is a semi-trailer configured for use with a road tractor (i.e., in forming a so-called 18-wheeler). The trailer 1000 includes a chassis having axles with multiple sets of wheels. The trailer 65 1000 defines a length L in a longitudinal or transport direction, defining a first direction 8, and the length L may

be 53 feet. Perpendicular to the longitudinal direction, the trailer 1000 defines a width W, defining a second direction 9, and a height H, defining a third direction 10. The width W cooperates with the length L to define a plan view footprint of the trailer 1000, while the height H is measured perpendicular to the footprint (i.e., perpendicular to the ground). Subtracting for wall thicknesses, the length L, the width W, and the height H cooperate to define a cargo receiving interior volume of the trailer 1000. The trailer 1000 includes a plurality of sidewalls 12, including two primary lengthwise sidewalls 12 and a sidewall 12 facing the leading direction and spanning between the two primary lengthwise sidewalls 12. All of the sidewalls 12 extend between a roof 13 of the trailer 1000 and a floor 14 of the trailer 1000. As discussed in further detail below, the sidewalls 12 can be constructed of pairs of panels 15, 16 joined together by joints extending parallel to the direction of the trailer height H between the roof 13 and the floor 14. Top rails 22 and bottom rails 24 are provided to flank and secure the upper and lower edges of each of the sidewall panels 15, 16. At the rear of the trailer 1000 as shown in FIG. 2, at least one door panel 18 is provided to selectively open for accessing the interior cargo volume for loading and unloading.

FIGS. 3-8 illustrate a composite sidewall 100 for a cargo body. For example, the sidewall 100 may be used in constructing an over-the-road semi-trailer like that of FIGS. 1 and 2. In particular, the construction of the sidewall 100 may be applied to the two longitudinal sidewalls that span the length of the trailer in the travel direction. More particularly, FIGS. 3-8 disclose a curbside sidewall for such a semi-trailer. However, it will be understood that an opposite sidewall of the semi-trailer, though not shown, can be constructed of similar components according to similar methods, and the opposite sidewall may be, for example, a mirror image of the illustrated curbside sidewall. Aspects of the invention are not necessarily limited to semi-trailers like that of FIGS. 1 and 2, and other trailer and cargo body configurations are understood as optional.

The sidewall 100 is manufactured (e.g., molded) as a single panel to span the length of the cargo body. The sidewall 100 has a composite construction including a core sheet, or simply, core 104, and respective interior and exterior skins 108, 112. The interior skin 108 is secured to a first side 116 of the core 104 facing the cargo receiving volume of the trailer, and the exterior skin 112 is secured to a second side 120 of the core 104 opposite the first side 116 and facing the exterior of the trailer. The skins 108, 112 conform to the core 104, including certain irregularities or offsets as described below. Each of the interior and exterior skins 108, 112 can have a thickness perpendicular to a sheet plane that is not less than 0.008 inch and not more than 0.100 inch in some constructions (e.g., 0.050 inch). The interior and exterior skins 108, 112 can be steel, aluminum, or composite material (e.g., reinforced plastic such as fiberglass-reinforced plastic, or plastic reinforced with carbon fiber or other structural strand and/or fabric). In some constructions, the length of the single-panel sidewall is 624 inches or 52 feet. One or both of the skins 108, 112 can be continuous, as a single piece, to span the entire panel length.

FIGS. 5-8 illustrate that the interior surface of the sidewall 100 can include a plurality of recesses 124 at regular intervals along the first direction 8 (e.g., 24 inches or 2 feet on-center spacing) to accommodate a plurality of logistics inserts 126 (see FIG. 7). The recesses 124 can be elongated in the sidewall height direction and may extend fully from a top edge 128 to a bottom edge 132, although the recesses 124 may alternately extend over less than the entire height.

With reference to FIG. 6, the recesses 124 can each include a bottom face 136 and two transition faces 140 positioned on alternate sides of the bottom face 136. The transition faces 140 connect the bottom face 136 to the remainder of the interior surface of the sidewall 100, the bottom face 136 being offset relative to the remainder of the interior surface. Each of the transition faces 140 can extend at an angle relative to the bottom face 136 that is greater than 90 degrees. Alternatively, the angle between the transition face 140 and the bottom face 136 may be equal to or less than 90 degrees. The logistics insert 126 is positioned against the bottom face 136 of the recess 124 as shown in FIG. 7, such that the bottom face 136 acts as a supporting surface for the logistics insert 126. The logistics insert 126 may be in direct or indirect contact with the bottom face 136.

Spaced along each recess 124 in the third direction 10 are a plurality of sub-recesses or pockets 144. The pockets 144 can be positioned along a center, or middle, of each of the bottom faces of the recesses 124, as measured along the first direction 8 of the sidewall 100, at regular lengthwise intervals along third direction 10 (e.g., 6 inches on-center spacing). Alternatively, the pockets 144 may be positioned at an alternate position on the bottom face 136 of the recess 124 and may be provided in more than one row. The pockets 144 can provide clearance for fittings and hardware attached to the logistics insert 126 during use of the assembled cargo body. In the illustrated construction, the pockets 144 do not support the logistics insert 126. In other words, the logistics insert 126 does not extend into the pocket(s) 144. Alternatively, a portion of the logistics insert 126 may extend into the pocket(s) 144 so that the pockets 144 provide support for the logistics insert 126.

In some embodiments, the pockets 144 can be oval in shape. In other embodiments, the pockets 144 may be square in shape, rectangular in shape, or the like. The pockets 144 can be formed by through holes in the interior skin 108 and corresponding pockets recessed into the core 104, such that a hole is formed in the interior skin 108 at each of the pockets 144. Alternately, the interior skin 108 may be recessed into one or more of the core pockets, rather than being punched or otherwise apertured, such that the interior skin 108 is continuous through the pocket(s) 144 and forms an interior-facing surface thereof.

With renewed reference to FIG. 7, the logistics insert 126 is a flat plate having a length that extends along the third direction 10 of the recess 124. The logistics insert 126 includes a plurality of apertures 148 spaced along the length of the logistics insert 126 such that the apertures 148 are positioned over the pockets 144 when the logistics insert 126 is positioned in the recess 124 (e.g., edges of the logistics insert apertures 148 match up with edges of the core 104 formed by the pocket 144). The logistics insert 126 can have a thickness that is the same as the offset amount between the bottom face 136 and the remainder of the interior surface such that an interior surface of the logistics insert 126 is planar with the remainder of the interior surface of the panel. Alternatively, the thickness of the logistics insert 126 may be less than or greater than the offset amount between the bottom face 136 and the remainder of the interior surface of the panel. Although FIG. 7 illustrates that the logistics inserts 126 can be secured exclusively by bonding into the respective recesses 116, alternatively or additionally the logistics inserts 126 can be secured with fasteners, such as screws or rivets (e.g., arranged in rows).

Referring to FIG. 8, the core 104 can define a thickness (e.g., maximum thickness 152) that is present throughout some but not all portions of the sidewall 100. Core thickness

at any location is measured between the interior and exterior core surfaces that receive the interior and exterior skins **108**, **112**. In other words, core thickness is measured in the second direction **9** perpendicular to the principal parallel planar directions, or the first direction **8** and the third direction **10**, of the interior and exterior skins **108**, **112**. At locations in which the interior and/or the exterior skins **108**, **112** are removed from the core **104**, core thickness is measured between the first side **116** of the core **104** and the second side **120** of the core **8**. In some constructions, the core thickness throughout a majority of the sidewall **100** defines a maximum thickness **152** of the core **104**. However, the description below refers to designated thickness-reduced portions of the core **104** (i.e., reduced core thickness **153A** at the recesses **124**, and reduced core thickness **153B** at the pockets **144**). In some constructions, the maximum core thickness **152** can be 0.200 inch or greater, more particularly 0.400 inch or greater, up to 1.5 inches, or more. For example, the maximum core thickness **152** can be about $\frac{1}{2}$ inch (i.e., 0.500 inch \pm $\frac{1}{8}$ inch). The maximum core thickness **152** can be 0.625 inch. The recesses **124** can be recessed or offset about 0.125 inch or less (e.g., 0.080 inch) from a plane **154** defined by the unrecessed parts of the interior skin **108**. All the recesses **124** can be recessed the same in depth, or the depths of individual recesses **124** may differ. The pockets **144** can be recessed or offset about 0.437 inch from the plane **154**. This may leave a core thickness of less than 0.100 inch at the pocket locations (e.g., 0.087 inch). In other constructions, the core thickness is reduced to zero at the pocket locations, representing discontinuities or apertures in the core **104**.

The core **104** can be constructed of any one or more of a number of materials including, but not limited to, metal (e.g., carbon steel, mild steel, stainless steel, galvanized steel, or aluminum), wood, plastic (e.g., extruded polyethylene (PE), foam such as polymer foam (e.g., plastic, PE-based foam, blow molded, thermoset, etc.), paper, ceramic. The core structure can be flat or plate-like, formed as a honeycomb structure, or a profiled sheet with interspersed peaks and valleys. As such, the core **104** may have a consistent material cross-section with uniform density, either solid or including void spaces, or alternately a variable cross-section construction. The core **104** can span the entire sidewall length (and height), although the thickness of the core **104** may vary throughout as discussed further herein.

In addition to the portions of the core **104** that are thickness-reduced at the recesses **124** (and further at the pockets **144**), additional thickness reductions **155** may be present as shown throughout FIG. **5**. The thickness reductions **155** can include a full lengthwise reduction, creating an offset or recess on the exterior side for receiving an upper or top rail **156** of the cargo body. The core thickness at the thickness reductions **155** can be reduced to about 0.125 inch. The exterior skin **112** conforms to the core **104** so as to follow the offset of the core **8** created by the thickness reduction **155** for the top rail **156**. In an alternate construction, there may be an offset or recess formed for the top rail on the interior side of the core **104**, rather than the exterior side. Thickness reductions **155** in the core **104** can also be provided at one of the lengthwise ends and along a lengthwise-extending bottom edge **132** to accommodate outer assembly plating **157** as shown in FIG. **5**. Likewise, core thickness reductions along an opposite one of the lengthwise ends and along a lengthwise-extending top edge **128** are provided to accommodate inner assembly plating **160**, also shown in FIG. **5**. Plates can be provided in quantities exceeding one (e.g., twenty-five of the assembly plates, and

five of the assembly plates). In constructions where the cargo body upper and lower rails are secured to the panel of the sidewall **100** with fasteners that extend through the core **104** and/or skins **108**, **112**, the assembly plating **157**, **160** provides enhanced fastener retention. Any or all of the thickness reductions **155** in the core **104** can be manufactured by machining (e.g., CNC) to remove core material. In some cases, the core **104** may begin production as a sheet of uniform thickness. The core **104** can be processed by routing, milling, etc. into the configuration of FIGS. **3** and **4**.

The manufacturing process for constructing the sidewall **100** can include separately manufacturing the plates **157**, **160**, the core **104**, the interior skin **108**, and the exterior skin **112**, although it is noted that these components may optionally be provided in a pre-production shape, which is not their final shape, when brought together for assembly. The exterior skin **112** is first laid down on its exterior side on a table or platen. The plates **157** of the outer assembly plating are then placed onto the interior side of the exterior skin **108**. The core **104** is then laid onto the exterior skin **112** and the plates **157**, with the plates **157** being received into core recesses so that the exterior surface of the core **104** lies against the interior side of the exterior skin **112**. The plates **160** of the inner assembly plating are then placed onto the core **104**, and in particular placed into core recesses on the interior side of the core **104**. Thus, the plates **157**, **160** can be flush with the interior side of the core **104** for receiving the interior skin **108**, which is then laid onto the interior side of the core **104**. As noted above, this can include laying one continuous interior skin **108** across the entire core **104**, from end to end and side to side, including the recesses **124**. Alternately, this step can include laying multiple, independent sections of the interior skin **108**. Once all the components are assembled together as stated above, the panel **100** can be molded (e.g., vacuum molded) into a single piece. The molding may include shaping of the skin(s) **108**, **112** to conform to the core **104** in addition to bonding with the core **104**. In some cases the core **104** may also be subjected to shaping during the molding. In some aspects (e.g., where the skins **108**, **112** are metal), molding may refer to stamping of the panel components (e.g., from a flat starting configuration to a non-flat final configuration). Although it is possible in some constructions to also include the logistics inserts **126** in the assembly of the panel prior to molding, the logistics inserts **126** may be placed into the recesses **124** and attached after molding of the panel **100** is completed. Alternatively, the logistics insert **126** may be used to mold, press, or otherwise shape the recesses **124** into the panel. For example, the core **104**, the interior skin **108**, and the exterior skin **112** may be assembled prior to heating the core **104**. Once the core **104** is heated, the logistics inserts **126** may be pressed into the core **104**, forming the recesses **124** and the pockets **144** in the core **104** and the interior skin **108**. Additionally, the interior skin **108** and the exterior skin **112** may be assembled onto the core **104** at the same time in which the core **104** is pressed to form the recesses **124**. The logistics inserts **126** can be attached with or without mechanical fasteners (e.g., screws, rivets). For example, the logistics inserts **126** can be bonded into the recesses **124** (e.g., with adhesive). If bonded in place, the logistics inserts **124** may optionally also be attached with mechanical fasteners. Once the sidewall **100** is completely assembled, it is joined with additional walls, a floor, and a roof to construct a cargo body or cargo box, e.g., a trailer having the general shape and features of the trailer **1000** of FIGS. **1** and **2**. Additional components of the cargo body, such as the upper and lower rails of each sidewall **100** can be assembled at the

time of final cargo body construction or alternately assembled with their respective sidewalls 100 prior to final cargo body construction. Similar to the attachment of the logistics inserts 126, the upper and lower rails can be bonded and/or attached with mechanical fasteners.

The core thickness 153B at the pocket 144 is significantly reduced when compared with the core thickness of the recess 124. In the illustrated embodiment, the core thickness 153A at the recess 124 is less than 85% of the maximum core thickness 152, whereas the core thickness 153B at the pocket 144 is less than 15% of the maximum core thickness 152. In other embodiments, the core thickness 153B at the pocket 144 may be absent, or greater than 15% of the maximum core thickness 152. The pocket 144 defines a surface that is oval in shape. In other words, the cross sectional view of the pocket 144 depicts a half oval, such that the pocket 144 does not include any edges, but rather a curved profile. In other embodiments, the pocket 144 may include a cross sectional shape that is different than an oval.

FIGS. 9-11 illustrate an alternate sidewall 200 according to another embodiment of the invention. The sidewall 200 includes a core 204 with an interior skin 208 secured to a first side 216 of the core 204 and an exterior skin 212 secured to a second side 220 of the core 204. As shown in FIG. 9, recesses 224 similar to the recesses 124 of FIG. 3 are formed in the sidewall 200. The recesses 224 of FIG. 9 differ from the recesses 124 of FIG. 3 in that pockets 244 disposed in the recesses 224 have a core thickness of zero and extend along the entirety of each recess 224. In other words, the pockets 244 form gaps in the core 204 such that the core 204 includes separate core segments 204A, 204B separated by the pockets 244. Intermediate core segments 204A and those core segments 204A that are disposed between two pockets 244, and can include a recessed first edge 268 and a recessed second edge 272, the recessed first edge 268 being on an opposing side to the recessed second edge 272 along direction 8. When the core segment 204A is assembled within the sidewall 200, the recessed first and second edge 268, 272 of adjacent core segments are disposed on opposite sides of a mutually defined pocket 244. End core segments 204B can differ from the intermediate core segments 204A in that the end core segments 204B may include solely one recessed edge. Alternatively, the end core segments 204B may be identical to the intermediate core segments. In addition, the end core segments 204B may include additional recessions to accommodate assembly plating.

Similar to the core 204, the interior skin 208 does not extend into the pocket 244, meaning the interior skin 208 also includes gaps, forming separate interior skin segments 208A, 208B. The interior skin segments 208A, 208B conform to the core 204, such that intermediate interior skin segments 208A also include a recessed first edge 288 and a recessed second edge 292. End interior skin segments 208B may include solely one recessed edge, although the end interior skin segments 208B may be identical to the intermediate interior skin segments 208A. In some embodiments, the interior skin segment 208A, 208B may be shorter than the core segment 204A, 204B, such that the interior skin segment 208A, 208B ends prior to the core segment 204A, 204B ending. Alternatively, the interior skin segment 280 and the core segment 260 may be the same length.

Thickness reductions 300 in the core segments 204A, 204B can also be provided at one of the lengthwise ends and along a lengthwise-extending bottom edge 301 to accommodate outer assembly plating, as shown in FIGS. 9 and 10. Likewise, core thickness reductions 300 along an opposite one of the lengthwise ends and along a lengthwise-extending

top edge 302 are provided to accommodate inner assembly plating 308, 312, also shown in FIG. 9. Plates may be provided in quantities similar to the quantity of interior skin segments 280. In other words, a bottom plate 308 and a top plate 312 may be provided for each core segment 260. In additional embodiments, the sidewall 200 may include any number of plates. The core reductions along the top edge 302 and bottom edge 301 are spaced apart from the pocket 244, with an increased core thickness being disposed between the core reduction the plates 308, 312 is separated from the pocket 244, preventing the plate 308, 312 from coming into contact with a logistics insert 226. The interior skin segments 280 may be flush with the plates 308, 312 such that the core 204 is not recessed at the plates 308, 312, although, in additional embodiments, the plates 308, 312 may include additional recessed, or displaced sections to accommodate for the plates 308, 312. In constructions where the cargo body upper and lower rails are secured to the panel of the sidewall with fasteners that extend through the core 204 and/or skins 208, 212, the plates 308, 312 provide enhanced fastener retention.

FIG. 11 further illustrates an alternate style of logistics insert 226 to that of the logistics insert 126 shown in the embodiment of FIG. 7. Such logistics inserts 226 can be commercially available from Ancra International. The logistics insert 226 has a non-flat extrusion profile, including a central track 316, along which there are provided rounded (e.g., semi-circular) widenings 320 at regular intervals. The logistics insert 226 includes a central portion 324 and wings or flanges 328, which are recessed into the sidewall 100. An alternate style of logistics insert (not shown) that can be used at some or all of the locations of the logistics inserts 226 shown in the preceding figures may include a non-flat extrusion profile, with a central portion and two peripheral wings or flanges, with parallel tracks defined therebetween. The central portion can include a row of apertures for logistics fittings. Although the flanges are recessed into the sidewall recesses 224, the central portion may be further recessed, and may even be recessed a majority of the way, or entirely, through the core 204 to the exterior skin 212. Interior surfaces of the logistics insert can be flush with the interior surface of the interior skin 208.

The logistics insert 226 is configured to fit within the recess 224 such that, when the logistics insert 226 is fitted within the recess 224, the recessed first edge 288 and the recessed second edge 292 of the interior skin segments 260 form a surface which supports the logistics insert 226, particularly wings or flanges 328 of the logistics insert 226. Alternatively or additionally, a surface of the core 204 may act as a surface which supports the logistics insert 226. A portion of the logistics insert 226 may be disposed within the pocket 244, with the exterior skin 212 forming a barrier between the logistics insert 226 and the exterior of the panel 200. In the depicted embodiment, the central portion 324 and the central track 320 are disposed within the pocket 244. In some embodiments, the logistics insert 226 may be in contact with the exterior skin 212. Alternatively, the logistics insert 226 may be spaced apart from the exterior skin 212.

The embodiments described above and illustrated in the figures are presented by way of example only and are not intended as a limitation upon the concepts and principles of the present invention. As such, it will be appreciated by one having ordinary skill in the art that various changes in the elements and their configuration and arrangement are possible without departing from the spirit and scope of the

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present invention as set forth in the appended claims. Various features of the invention are set forth in the following claims.

What is claimed is:

1. A composite molded cargo body panel, the composite molded cargo body panel having an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction, the composite molded cargo body panel comprising:

a core having a thickness measured perpendicular to the first and second directions;

an interior skin secured to a first side of the core, the interior skin defining an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel;

an exterior skin secured to a second side of the core opposite the first side such that a spacing distance between the interior and exterior skins defines the core thickness;

a recess provided in the interior skin, wherein the core thickness at the recess is reduced compared to a maximum core thickness, and wherein the recess defines a support surface;

a pocket formed in the recess, wherein the core thickness at the pocket is less than the core thickness at the recess; and

a logistics profile insert attached to the support surface of the recess so that, at the recess, the logistics profile insert extends across the pocket, wherein the exterior skin is continuous, spanning the recess.

2. The composite molded cargo body panel of claim 1, wherein the logistics profile insert extends over the pocket without extending therein.

3. The composite molded cargo body panel of claim 1, wherein the interior skin comprises two separate interior skin segments, wherein the recess is formed by the two separate interior skin segments, and wherein adjacent edges of the two separate interior skin segments are spaced apart across the pocket.

4. The composite molded cargo body panel of claim 1, wherein the interior skin comprises a single, continuous sheet that spans the first side of the core.

5. The composite molded cargo body panel of claim 1, wherein a portion of the logistics profile insert is received within the pocket.

6. The composite molded cargo body panel of claim 5, wherein the portion of the logistics profile insert extends to the exterior skin and divides the core into separate segments.

7. The composite molded cargo body panel of claim 1, wherein the recess extends parallel to the second direction at a prescribed position along the first direction.

8. A composite molded cargo body panel, the composite molded cargo body panel having an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction, the composite molded cargo body panel comprising:

a core having a thickness measured perpendicular to the first and second directions;

an interior skin secured to a first side of the core, the interior skin defining an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel;

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an exterior skin secured to a second side of the core opposite the first side such that a spacing distance between the interior and exterior skins defines the core thickness;

a recess provided in the interior skin, wherein the core thickness at the recess is reduced compared to a maximum core thickness; and

a pocket formed in the recess, wherein the core thickness at the pocket is zero.

9. The composite molded cargo body panel of claim 8, wherein the interior skin extends into the recess.

10. The composite molded cargo body panel of claim 9, wherein the interior skin comprises two separate interior skin segments.

11. The composite molded cargo body panel of claim 8, wherein each of the two separate interior skin segments includes a recessed portion that extends into the recess.

12. The composite molded cargo body panel of claim 11, further comprising an insert resting on the recessed portions of the two separate interior skin segments.

13. The composite molded cargo body panel of claim 10, wherein the core comprises two separate core segments, and wherein the pocket separates the two separate core segments.

14. A composite molded cargo body panel, the composite molded cargo body panel having an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction, the composite molded cargo body panel comprising:

a core having a thickness measured perpendicular to the first and second directions;

an interior skin secured to a first side of the core, the interior skin defining an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel;

an exterior skin secured to a second side of the core opposite the first side such that a spacing distance between the interior and exterior skins defines the core thickness, wherein the exterior skin is continuous throughout the entirety of the composite molded panel; and

a pocket in the interior skin, wherein the core thickness at the pocket is reduced to zero, wherein the interior skin is absent at the pocket.

15. A composite molded cargo body panel, the composite molded cargo body panel having an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction, the composite molded cargo body panel comprising:

a core having a thickness measured perpendicular to the first and second directions;

an interior skin secured to a first side of the core, the interior skin defining an interior surface of the composite molded cargo body panel for facing a cargo receiving volume of a cargo body constructed with the composite molded cargo body panel;

an exterior skin secured to a second side of the core opposite the first side such that a spacing distance between the interior and exterior skins defines the core thickness;

a recess provided in the interior skin, wherein the core thickness at the recess is a reduced core thickness compared to a maximum core thickness, and wherein the recess defines a pair of spaced-apart support surfaces;

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a pocket formed in the recess between the pair of support surfaces, the pocket formed at least partially through the core, without extending into or through the exterior skin, wherein the core thickness at the pocket is less than the reduced core thickness; and

a logistics profile insert attached to the support surfaces of the recess so that a portion of the logistics insert including a track is received within the pocket.

16. The composite molded cargo body panel of claim 15, wherein the portion of the logistics profile insert is supported directly by the core.

17. The composite molded cargo body panel of claim 15, wherein the interior skin comprises two separate interior skin segments, and the recess is formed by the two separate interior skin segments such that adjacent edges of the two separate interior skin segments are spaced apart across the pocket.

18. The composite molded cargo body panel of claim 15, wherein the pocket extends along the entirety of the recess.

19. The composite molded cargo body panel of claim 15, wherein the portion of the logistics profile insert including the track is positioned centrally between the support surfaces.

20. The composite molded cargo body panel of claim 15, wherein the core thickness is zero at the pocket such that the core is divided into separate segments, and wherein the portion of the logistics profile insert including the elongated track extends to the exterior skin.

21. The composite molded cargo body panel of claim 15, wherein the exterior skin is continuous throughout the entirety of the composite molded cargo body panel.

22. A composite molded cargo body panel, the composite molded cargo body panel having an overall flat rectangular shape that spans a first direction and a second direction perpendicular to the first direction, the composite molded cargo body panel comprising:

a core having a thickness measured perpendicular to the first and second directions;

an interior skin secured to a first side of the core, the interior skin defining an interior surface of the composite molded cargo body panel for facing a cargo

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receiving volume of a cargo body constructed with the composite molded cargo body panel;

an exterior skin secured to a second side of the core opposite the first side such that a spacing distance between the interior and exterior skins defines the core thickness;

a recess provided in the interior skin, wherein the core thickness at the recess is a reduced core thickness compared to a maximum core thickness;

a pocket formed in the recess, the pocket formed at least partially through the core, without extending into or through the exterior skin; and

a logistics profile insert at least partially received in the recess so that a pair of flanges of the logistics profile insert are positioned in the recess, and a central portion of the logistics profile insert extends from the pair of flanges further toward the exterior skin.

23. The composite molded cargo body panel of claim 22, wherein the central portion of the logistics profile insert is supported directly by the core.

24. The composite molded cargo body panel of claim 22, wherein the interior skin comprises two separate interior skin segments, wherein the recess is formed by the two separate interior skin segments, and wherein adjacent edges of the two separate interior skin segments are spaced apart across the pocket.

25. The composite molded cargo body panel of claim 22, wherein the core thickness is zero at the pocket such that the core is divided into separate segments, and wherein the central portion of the logistics profile insert extends to the exterior skin.

26. The composite molded cargo body panel of claim 22, wherein the logistics profile insert includes in its central portion a track.

27. The composite molded cargo body panel of claim 22, wherein the pocket extends along the entirety of the recess.

28. The composite molded cargo body panel of claim 22, wherein the exterior skin is continuous throughout the entirety of the composite molded cargo body panel.

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